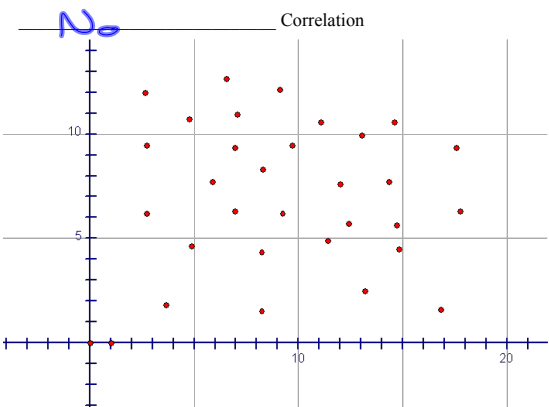
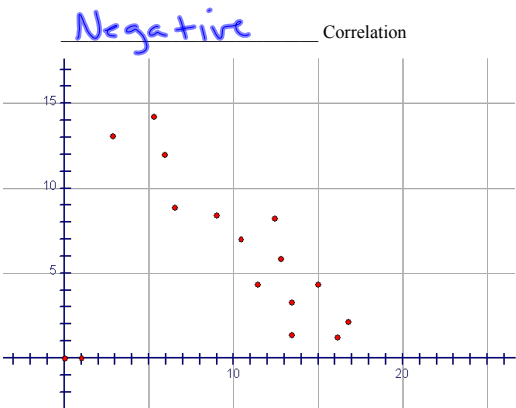
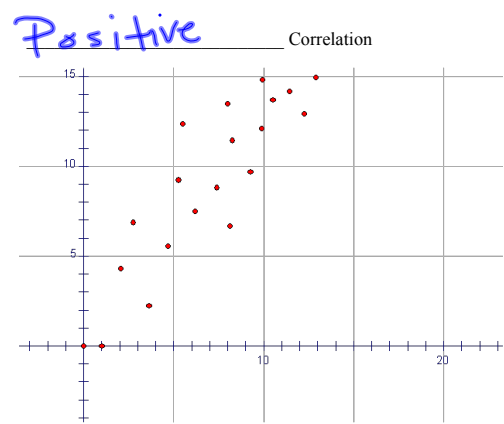


2-5 Modeling Real World Data

Scatter plot--set of data graphed as ordered pairs



Line of Best Fit--line that closely approximates the data

- an equation that allows you to make a prediction

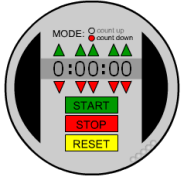
$$y = mx + b$$

City	North Latitude	Maximum Normal Temp. For January (in °F)
Miami, FL	26°	75
Charleston, SC	33°	50
Washington, D.C.	39°	43
Boston, MA	42°	36
Portland, ME	44°	31



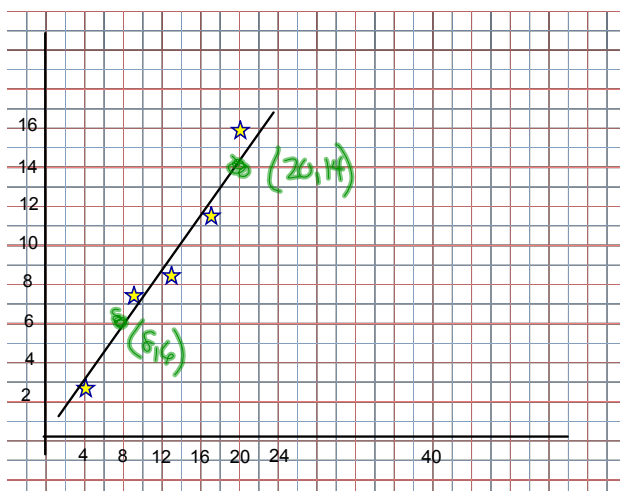
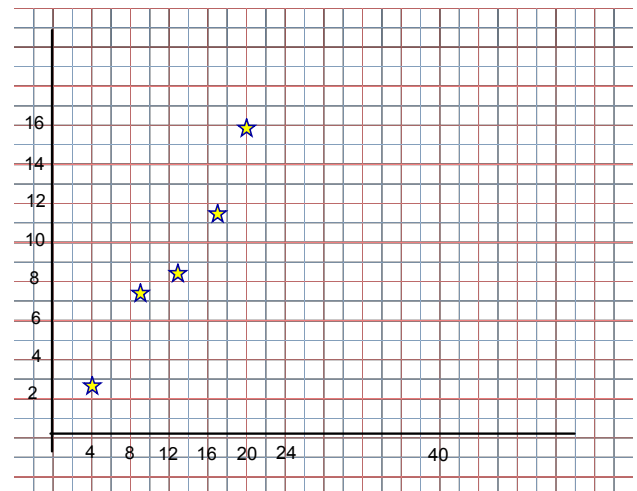
$$\begin{aligned} &\begin{matrix} (40, 40) \\ (32, 60) \end{matrix} \quad m = \frac{60 - 40}{32 - 40} = \frac{20}{-8} \\ &m = -2.5 \end{aligned}$$

$$\begin{aligned} y &= -2.5x + b \\ 40 &= -2.5(40) + b \\ 140 &= b \\ y &= -2.5x + 140 \end{aligned}$$



The Wave

# of Students	Duration
4	2.8
9	7.8
13	8.7
17	11.8
20	16.0



$$\begin{aligned} & \begin{pmatrix} 8, 6 \\ 20, 14 \end{pmatrix} \quad m = \frac{14 - 6}{20 - 8} = \frac{8}{12} = \frac{2}{3} \\ & y = \frac{2}{3}x + b \\ & 6 = \frac{2}{3}(8) + b \\ & \frac{2}{3} = b \end{aligned}$$

$$\begin{aligned} y &= \frac{2}{3}x + \frac{2}{3} \\ y &= .67x + .67 \\ y &= \frac{2}{3}(60) + \frac{2}{3} \\ y &= 40.67 \text{ sec} \end{aligned}$$

$$120 = \frac{2}{3}x + \frac{2}{3}$$

$$179 = x$$

HW

p83-85 #s 1, 4-6, 8